

Technical note on patents and the mining industry—Part II

by L. Dison*

This technical note is issued in two parts as follows.

Part I, which appeared in the January issue of this *Journal*, after a brief introduction, discusses the value of patents and the law of patents, including patent applications and the exploitation of inventions. This is followed by some comments for the benefit of would-be inventors and potential users of patents.

Part II focuses on the mining industry and then discusses views on patents that were quoted in Part I. The last section makes recommendations as to how inventors and users (including mining authorities) should handle patents.

PRODUCT CHAMPIONS AND THE MINING INDUSTRY

Because of its very size, the mining industry in South Africa automatically becomes a target for potential inventors and innovators. Individuals and companies from outside are continually on the lookout for improvements to the total mining process, whether in the form of new machines or materials or systems. Small wonder, then, that mining officialdom casts a somewhat jaundiced eye on all innovations and the bodies promoting them, especially when ownership of patents is claimed.

The product champions mentioned in the Introduction (Part I) encountered a variety of reactions to their proposals in regard to underground support systems. It is not considered necessary, nor would it be wise, to expound on any of these reactions in detail. Adverse reaction to innovation is nothing new; centuries ago Machiavelli is on record as saying that man's automatic reaction to new ideas is to reject them.

As can be imagined, the product champions in this case met with a certain measure of outright rejection and even hostility. This was counter-balanced however by encouraging and constructive interest and advice from many sources within the industry.

With hindsight, one can see that the product champions themselves may have been guilty of poor public relations, in that they did not make sure that potential end-users were kept fully briefed as to their rights and status in regard to the proposed inventions and patents.

To explain the mining industry's standpoint, some interesting points were made from a source within the mining industry itself, bearing in mind that the programme was aimed at promoting support systems underground.

The gist of this argument was that, over the years, the industry had already tested a multiplicity of support systems, and that most so-called new systems or techniques were adaptations of previously tried methods and therefore

not really original. Proposed innovations might therefore be regarded as obvious, or as stemming from prior art, and the industry would resent having to pay royalties for such so-called novel techniques or systems.

Another point made was that the industry would more readily accept innovations that boosted production than innovations that only modified existing support systems. In the light of the product champions' experience, such reaction was to be expected, although they do not believe that modification to an existing technique, or the substitution of one material for another to improve the product, is necessarily 'obvious' in terms of the Patent Act. Each case would have to stand on its own merits.

The following objections were also encountered in the industry.

- (i) Royalty payments would result in excessive enrichment of patent holders.
- (ii) There was a danger of being 'held to ransom' by patent holders.

It may, of course, be true that excessive enrichment has occurred in the past. On the other hand, in today's competitive climate, an avaricious inventor could well price himself out of the market; and, if a patented product or process proves to be more effective and cheaper than its predecessors, the inventor should not be grudged adequate recompense.

As for being held to ransom, few innovations are so revolutionary or effective as to make their adoption automatic. If a patent-holder attempts to force his product on the industry by legal means, he will find that the product is quickly shunned.

To summarize, the product champions did indeed encounter resistance, sometimes unexpected and unjustified, but they believe they now understand the reasons for such resistance. On the other hand, they would certainly have made no progress at all without the active and encouraging support of many individuals and groups within the industry.

DISCUSSION

Here, it is of interest to point to a world-wide phenomenon in activities relating to innovation and invention. In the United States, the phenomenon is termed

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the NIH syndrome (Not Invented Here). Inventors need to steel themselves against those who decry their inventions, and should take heart in knowing that even the very great inventors themselves were not immune from the syndrome. Henry Ford rejected the self-starter, Thomas Edison saw no future in alternating current, and Parsons, who invented the steam turbine, thought that the gas turbine was intrinsically impossible.

The inventor will learn that he is bound to strike opposition; not only from those who resist change by virtue of inertia or prejudice, but from others who might have strongly-held technical objections, even if such objections are incorrect or out of date. In the mining industry, it is possible that many recent 'new' ideas may have been postulated in the past, although not fully investigated or developed at the time. Small wonder, then, that the industry tends to take an attitude of 'nothing new under the sun'. It is necessary to look into the views expressed by Kingston¹ and *The Economist*² about the value and efficacy of patents.

As shown in Part I, Kingston emphasizes the importance of expertise (know-how) and promotional ability; the latter stresses the importance of speedy development and production, in order to give the company 'first crack at the market'.

The Economist appears to believe that the inventor does no more than file his application and wait for royalties to arrive as and when the invention becomes used. This viewpoint does not appreciate the purpose of provisional applications, which not only afford the inventor protection, but also oblige him to work at great speed in order to perfect his product and file his complete specification within the year's grace. There is therefore no contradiction in filing applications and thereafter working at speed to get into production, as suggested by *The Economist* or, alternatively, making use of available know-how and promotional skills, as suggested by Kingston. The value of patent protection cannot be discounted when the innovation is in its developmental stages, and when its details may become widely known, possibly even to potential competitors.

The viewpoints expressed by Kingston and *The Economist* are significant and useful, but their relegation of a secondary role to patents is not justified or justifiable. Patents are also particularly important for lone inventors or smaller research organizations.

In the course of an R&D programme, whether in the laboratory or in the field, new ideas come to light, and more and more individuals get to know about the project. Product champions are therefore faced with a perpetual dilemma in regard to applying for new patents over and above the original applications. Research companies and lone inventors would be well advised to build protective screens of patents around their proposed innovations in order to give them some chance of deriving commercial benefits from their efforts. It may well be that their patents will turn out to be challengeable, but without patents they would have nothing at all to protect themselves from competition, scrupulous or otherwise.

In regard to the South African mining industry, a few

points deserve comment.

- Mining companies should appreciate that patents are generally filed to protect the inventor against imitators operating in the same field as the inventor—not to hold the potential client to ransom. In fact, during the development of the underground support system mentioned in the Introduction (Part I), the product champions encountered several adroit practitioners of copy-cat technology.
- Original thought and potential new technology arising from a patent should not be discouraged in a society ostensibly devoted to the concept of private enterprise.
- New ideas and technologies are in the long run designed to benefit the industry, even if inventors also derive some benefit.
- In the mining industry, it is difficult for potential innovations to be tested in the field, i.e. underground, and inventors are bound to explain their ideas and objectives to mining personnel whose facilities they have to use. Some synergy is bound to take place, and problems will almost inevitably arise as to where the innovative steps originated.
- In regard to the various types of companies that undertake innovation, powerful industrial companies with adequate R&D budgets are clearly in a favoured position. Such companies are often able to fund underground trials from within their own resources, while the small company or lone inventor depends on the goodwill of the mines. Nevertheless, there is no telling from where a useful idea might emanate, and the small man should not be summarily discarded.
- The smaller company or pure R&D organization is in another major respect at a great disadvantage. In all probability, the company will not possess any manufacturing facility of its own, and will therefore have to buy all its materials, some of which may require special fabrication. This will continually enlarge the circle of individuals or companies that have to be brought into the confidence of the inventor, further justifying the necessity for patent protection, and, possibly, confidentiality agreements.

CONCLUSIONS AND RECOMMENDATIONS

- The law of patents is designed to allow inventors to derive commercial benefit from their inventions. On the other hand, if potential users feel that they are being unduly exploited by inventors, they have the option to use other systems. The key factor in such decision-making is usually that of cost.
- It would clearly suit potential users to have several suppliers competing for any new system, to the possible disadvantage of the inventor or patent-holder. Whether such competition could take place without some or other body (user or supplier) having to pay royalties depends on the strength of the patent.
- Despite the apparent lengthy procedure in filing and applying for patents, and the safeguards built in to protect users of patents, inventors will continue to apply for patents; essentially to give themselves a temporary monopoly and, hence, a breathing space in which they can attempt commercial exploitation.

- After filing of either provisional applications or complete specifications, inventors are well advised to work at great speed to refine their inventions and to promote them commercially. Ownership of patents alone is not sufficient to ensure commercial or financial success.
- Inventors need to be constantly on guard against competitors who might attempt to imitate inventions or discredit the validity of patents.
- Inventors apply for patents to protect themselves against competition from other inventors or suppliers. It would be poor strategy to attempt to force royalty payments on the actual users, in this case the operating mine or mining group. It would be prudent for inventors to explain to potential clients their policy in regard to applying for patents.
- Mining authorities should appreciate that the law of patents gives them adequate protection against patents that do not incorporate truly inventive steps, or that are challengeable for some other reason, for example obviousness.
- Applying for patents is an ethical and legitimate business activity, and mining authorities should regard it as such.
- The NIH syndrome should be resisted, by both inventors and potential users.
- The mining industry is a leader in the field of continuing education, and should consider instituting courses in patent law for engineers, managers, rock-mechanics officers, and any personnel having to deal with new products or processes.
- An open attitude on the part of inventors and innovators, combined with the dispelling of ignorance about patents within the middle and upper echelons of the mining industry, should enable the industry to deal efficiently with would-be innovations that incorporate patents. Cost-saving and improved techniques could then be introduced without suspicion, resentment, or dispute.

ACKNOWLEDGEMENT

This note has stressed that patents and patent applications tend to become sensitive matters. The author has discussed the associated problems with several officials in the mining industry, but considers it prudent that they should not be named. Their advice and criticism are nevertheless gratefully acknowledged.

REFERENCES

1. Kingston, W. *Innovation*. London, John Calter, 1977.
2. The point of patents. *Economist, Lond.*, 15/09/1990, pp. 17, 18.

Environmental Earth Science

The Annual General Meeting of the Environmental Earth Science Group will take place on Tuesday, 10th March, 1992, in the Geology Lecture Theatre, Department of Geology, University of the Witwatersrand, at 17h00.

A short Annual General meeting will be followed by a lecture and slide show by the outgoing Chairman, Professor Morris Viljoen, on the topic

Mining and the Environment

The above lecture will also be delivered at the following venue and times:

Wednesday 26th February, 1992	17h00	Main Lecture Theatre Department of Geology Rhodes University Grahamstown
Tuesday 3rd March, 1992	16h30	Room 227, Shell Environmental and Geographical Science Building Upper Campus University of Cape Town

ALL ARE WELCOME